Python Programming

Course Code	20CS3352	Year	II	Semester	I
Course Category	PCC Lab	Branch	CSE	Course Type	Practical
Credits	1.5	L-T-P	0-0-3	Prerequisites	Programming for Problem Solving
Continuous Internal Evaluation :	15	Semester End Evaluation:	35	Total Marks:	50

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Apply Python programming constructs for solving problems.	L3
CO2	Conduct experiments as an individual, or team member by using Python programming.	L3
CO3	Develop an effective report based on various programs implemented.	L3
CO4	Apply technical knowledge for a given problem and express with an effective oral communication.	L3
CO5	Analyze outputs generated through Python programming.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1														3
CO2					1				2					
CO3										2				
CO4										2				
CO5		3												

	Syllabus	
Expt No	**Contents**	**Mapped CO**
1.	Demonstrate the difference between interactive mode and IDEs	**CO1,CO2,CO3,CO4,CO5**
2.	Demonstrate programs using basic constructs of Python.	**CO1,CO2,CO3,CO4,CO5**
3.	Programs to demonstrate Programming constructs.	**CO1,CO2,CO3,CO4,CO5**
4.	Programs to demonstrate decision making and branching (Selection)	**CO1,CO2,CO3,CO4,CO5**
5.	Programs to demonstrate iterative statements.	**CO1,CO2,CO3,CO4,CO5**
6.	Build modular programs using functions.	**CO1,CO2,CO3,CO4,CO5**
7.	Programs to perform operations on strings, regular expressions with built – in functions.	**CO1,CO2,CO3,CO4,CO5**
8.	Implement programs using various data structures.	**CO1,CO2,CO3,CO4,CO5**
9.	Programs to demonstrate access specifiers.	**CO1,CO2,CO3,CO4,CO5**
10.	Programs to demonstrate types of Inheritance, polymorphism,	**CO1,CO2,CO3,CO4,CO5**
11.	Python programming to demonstrate Exception handling	**CO1,CO2,CO3,CO4,CO5**
12	Installing, importing accessing and computations on a dataset using Pandas library.	**CO1,CO2,CO3,CO4,CO5**
13	Installing, importing accessing and computations on a dataset using Numpy library.	**CO1,CO2,CO3,CO4,CO5**
14	Programs to demonstrate Files.	**CO1,CO2,CO3,CO4,CO5**
15	Installing, importing accessing and computations on a dataset using MatplotLib library	**CO1,CO2,CO3,CO4,CO5**

Learning Resources
Text Books
1. Python Programming using Problem Solving Approach, Reema Thareja, 2017, OXFORD University Press
2. Charles Severance: Python for Everybody, Exploring Data in Python 3, Creative Commons-2016
3. Jake VanderPlas: Python Data Science Handbook, Essential Tools for Working with Data, O'Reilly Media, 2016
4. Python Programming: Problem Solving, Packages and Libraries, Anurag Gupta and G.P. Biswas,2020, McGraw Hill
Reference Books
1. Core Python programming, R. NageswaraRao, 2018, Dreamtech press.
2. Programming with python, T R Padmanabhan, 2017, Springer.
3. Edouard Duchesnay: Statistics and Machine Learning in Python Release 0.2, 2018
4. Wes McKinney: Python for Data Analysis, Agile Tools for Real World Data, O'Reilly Media, 2013
Resources & other digital material

1. NPTEL Course: Programming, Data Structures and Algorithms using Python, Registration Link: https://nptel.ac.in/courses/106/106/106106145/
2. Coursera: Introduction to Python Programming, Registration link: https://www.coursera.org/learn/python-programming-intro

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